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(FILE 'HOME' ENTERED AT 14:40:46 ON 12 JUL 2004)

~~FILE 'HCAPLUS'~~ ENTERED AT 14:41:14 ON 12 JUL 2004

L1 ~~2 US20030162985/PN~~

FILE 'REGISTRY' ENTERED AT 14:41:38 ON 12 JUL 2004

FILE 'HCAPLUS' ENTERED AT 14:41:43 ON 12 JUL 2004

L2 TRA L1 1- RN : 32 TERMS

~~FILE 'REGISTRY'~~ ENTERED AT 14:41:44 ON 12 JUL 2004

L3 ~~32 SEA L2~~

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L4 ~~1 US20030162985/PN~~

=> b hcap

~~FILE 'HCAPLUS'~~ ENTERED AT 14:42:32 ON 12 JUL 2004

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FILE COVERS 1907 - 12 Jul 2004 VOL 141 ISS 3

FILE LAST UPDATED: 11 Jul 2004 (20040711/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

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L1 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:551521 HCAPLUS
DN 139:125967
ED Entered STN: 18 Jul 2003
TI Materials and methods for forming hybrid organic-inorganic dielectric materials for integrated circuit applications
IN Rantala, Juha T.; Maaninen, Arto L. T.; Maaninen, Tiina J.; Pietikainen, Jarkko J.
PA Silecs, Inc., Finland
SO PCT Int. Appl., 108 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07F007-12
ICS C07F007-18

CC 76-3 (Electric Phenomena)

Section cross-reference(s): 29, 38, 73

FAN.CNT 4

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003057703	A1	20030717	WO 2003-IB248	20030108
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, VZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

~~US 2003162985~~~~US 2003162985~~

US 2002-41122

20020108 <--

US 2003166953

A1

20030904

US 2002-41302

20020108

US 2003166954

A1

20030904

US 2002-41343

20020108

US 2003171607

A1

20030911

US 2002-41272

20020108

US 2003176718

A1

20030918

US 2002-41121

20020108

PRAI US 2002-41121

A

20020108

US 2002-41122

A

20020108

US 2002-41272

A

20020108

US 2002-41302

A

20020108

US 2002-41343

A

20020108

US 2002-349955P

P

20020117

US 2002-395418P

P

20020713

OS MARPAT 139:125967

AB A method comprises reacting $R_{14}-mSiOR_{3m}$ in which m is an integer from 2-4, R1 is selected from alkyl, alkenyl, aryl, alkynyl or epoxy, and in which R1 is non-fluorinated, or fully or partially fluorinated; OR3 is alkoxy; with R_{2M1} in which R2 is selected from alkyl, alkenyl, aryl, alkynyl or epoxy, and in which R2 is at least partially fluorinated; and M1 is an element from group 1 of the periodic table; so as to make $R_{14}-mSiOR_{3m}-1R_2$. A similar method of the invention comprises reacting $R_{14}-mSiOR_{3m}-nX_{n-1}$ in which m is an integer from 2-4, and n is an integer from a to 3 and is not greater than m; R1 is selected from alkyl, alkenyl, aryl, alkynyl or epoxy, and in which R1 is non-fluorinated, or fully or partially fluorinated; OR3 is alkoxy; X is a halogen; with R_{2M1} , in which R2 is selected from alkyl, alkenyl, aryl, alkynyl or epoxy, and in which R2 is at least partially fluorinated; and M1 is an element from Group I of the periodic table; so as to make $R_2SiR_{14}-mOR_{3m}-nX_{n-1}$. These compds. thus formed can be further reacted to attach an addnl. Rx group, or hydrolyzed, alone or with .gtoreq.1 similar compds., to form a material having a mol. weight of from 500-10,000, which material can be deposited on various substrates as a coating or deposited and patterned for a waveguide or other optical device components.

ST optical device waveguide hybrid org inorg material dielec

IT Silanes

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(alkoxy; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Silanes

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(alkylalkoxy; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Silanes
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(aryl; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Silanes
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluoroalkyl; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Electric insulators
Electronic device fabrication
Hybrid organic-inorganic materials
Integrated circuits
(materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Polysilanes
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Epoxides
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(silyl; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT 359-51-3P 2925-45-3P 5700-28-7P 13888-69-2P 20160-39-8P
20160-43-4P, Tris(pentafluorophenyl)ethoxysilane 20160-45-6P
21980-43-8P, Methyl(pentafluorophenyl)dichlorosilane 25202-33-9P,
(Pentafluorophenyl)vinylchlorosilane 25202-37-3P 51989-69-6P
69656-69-5P 101947-16-4P, Perfluorooctyltriethoxysilane 220791-24-2P,
Perfluorooctyltrichlorosilane 561069-04-3P 561069-05-4P 561069-06-5P
561069-07-6P 561069-08-7P 561069-09-8P 561069-10-1P 561069-11-2P
561069-12-3P 561069-13-4P 561069-14-5P 561069-15-6P 561069-16-7P
561069-17-8P 561069-18-9P 561069-19-0P 561069-20-3P 561069-21-4P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Frohn, H; JOURNAL OF ORGANOMETALLIC CHEMISTRY 1996, V506(1-2), P155 HCAPLUS
- (2) Lapkin, I; Zhurnal Obshchei Khimii 1987, V57(1), P146 HCAPLUS
- (3) Popall, M; US 5973176 A 1999 HCAPLUS
- (4) Whittingham, A; JOURNAL OF ORGANOMETALLIC CHEMISTRY 1968, V13(1), P125 HCAPLUS

L1 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:551520 HCAPLUS

DN 139:125966

ED Entered STN: 18 Jul 2003

TI Materials and methods for forming hybrid organic-inorganic dielectric materials for integrated circuit applications

IN Rantala, Juha T.; Maaninen, Arto L. T.; Maaninen, Tiina J.; Pietikainen, Jarkko J.

PA Silecs, Inc., Finland

SO PCT Int. Appl., 110 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07F007-02
 CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 29
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003057702	A2	20030717	WO 2003-IB337	20030108
	WO 2003057702	A3	20031113		
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	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

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	US 2003171607	A1	20030911	US 2002-41272	20020108
	US 2003176718	A1	20030918	US 2002-41121	20020108
PRAI	US 2002-41121	A	20020108		
	US 2002-41122	A	20020108		
	US 2002-41272	A	20020108		
	US 2002-41302	A	20020108		
	US 2002-41343	A	20020108		
	US 2002-349955P	P	20020117		
	US 2002-395418P	P	20020713		

OS MARPAT 139:125966

AB The present invention generally relates to methods for making dielects. for integrated circuit processes and devices. More particularly, the invention relates to multilevel circuit processes, such as damascene processes that use metal and metal alloys (e.g., Cu and Cu alloys) as well as low-k dielec. materials. The methods of the present invention allow for greater control of the dielec. fabrication process. In one embodiment, the present invention is directed to a method for forming a hybrid organic-inorg. layer on a substrate, comprising: hydrolyzing a silane selected from the group consisting of a tetraalkoxysilane, a trialkoxysilane, a trichlorosilane, a dialkoxysilane, and a dichlorosilane, with a compound of the general formula: R1R2R4MR5, wherein R1, R2, and R4 are independently an aryl, alkyl, alkenyl, epoxy, or alkynyl group, wherein at least one of R1, R2, and R4 is fully or partially fluorinated, wherein M is selected from Group 14 of the periodic table, and wherein R5 is either an alkoxy group, OR3, or a halogen group, X. The present invention comprises using such precursors to make fully, partially, and non-fluorinated hybrid organic-inorg. siloxane materials as an interlevel dielec. and/or hard mask in integrated circuit processes and devices. Also, the present invention covers the use of such materials in printed circuit board applications, which are similar to those discussed for integrated circuits.

ST integrated circuit hybrid org inorg material dielec

IT Silanes

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(alkoxy; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Silanes

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (alkylalkoxy; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Silanes
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (aryl; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Silanes
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (fluoroalkyl; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT Electric insulators
 Electronic device fabrication
 Hybrid organic-inorganic materials
 Integrated circuits
 (materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

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 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (silyl; materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

IT 359-51-3P 2925-45-3P 5700-28-7P 13888-69-2P 20160-39-8P
 20160-43-4P 20160-45-6P 21980-43-8P, Methyl(pentafluorophenyl)dichloro
 silane 25202-33-9P 25202-37-3P 51989-69-6P 69656-69-5P
 101947-16-4P 220791-24-2P 561069-04-3P 561069-05-4P 561069-06-5P
 561069-07-6P 561069-08-7P 561069-09-8P 561069-10-1P 561069-11-2P
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 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (materials and methods for forming hybrid organic-inorg. dielec. materials for integrated circuit applications)

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STRUCTURE FILE UPDATES: 11 JUL 2004 HIGHEST RN 708207-86-7

DICTIONARY FILE UPDATES: 11 JUL 2004 HIGHEST RN 708207-86-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

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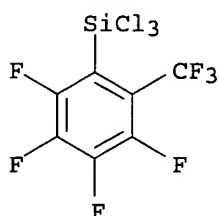
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

561069-21-4

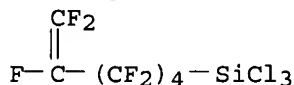
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 MF C7 Cl3 F7 Si
 SR CA
 LC STN Files: CA, CAPLUS
 DT.CA Caplus document type: Patent
 RL.P Roles from patents: PREP (Preparation); USES (Uses)



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2 REFERENCES IN FILE CA (1907 TO DATE)
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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 (CA INDEX NAME)
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 SR CA
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 DT.CA Caplus document type: Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)

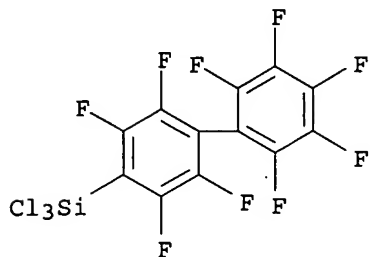


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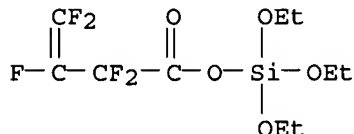
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 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)



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 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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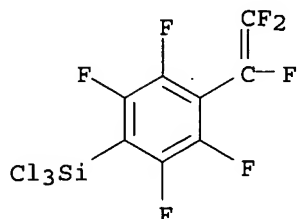


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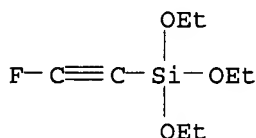
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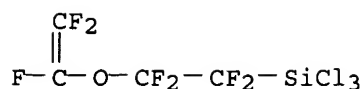
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 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
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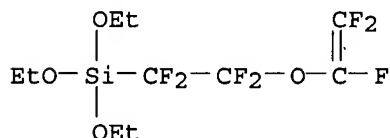
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 SR CA
 LC STN Files: CA, CAPLUS, USPATFULL
 DT.CA Caplus document type: Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)



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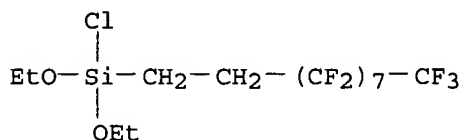
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RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
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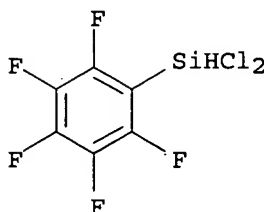
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DT.CA Caplus document type: Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
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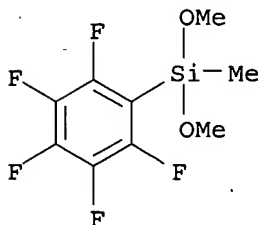
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RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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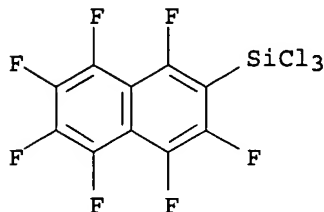


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 12 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN

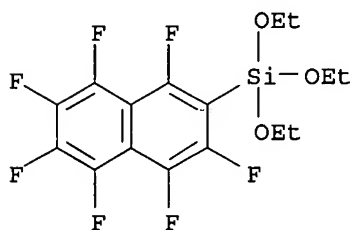
RN 561069-10-1 REGISTRY
CN Silane, trichloro(1,3,4,5,6,7,8-heptafluoro-2-naphthalenyl)- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C10 Cl3 F7 Si
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA Caplus document type: Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 13 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
RN 561069-09-8 REGISTRY
CN Silane, triethoxy(1,3,4,5,6,7,8-heptafluoro-2-naphthalenyl)- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C16 H15 F7 O3 Si
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA Caplus document type: Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)

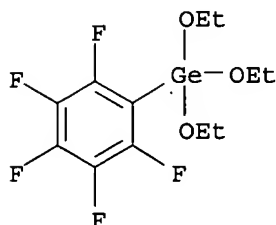


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 14 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
RN 561069-08-7 REGISTRY
CN Germane, triethoxy(pentafluorophenyl)- (9CI) (CA INDEX NAME)

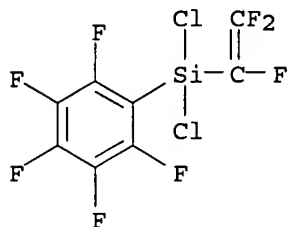
MF C12 H15 F5 Ge O3
 SR CA
 LC STN Files: CA, CAPLUS, USPATFULL
 DT.CA Caplus document type: Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 15 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 561069-07-6 REGISTRY
 CN Silane, dichloro(pentafluorophenyl)(trifluoroethenyl)- (9CI) (CA INDEX NAME)
 FS 3D CONCORD
 MF C8 Cl2 F8 Si
 SR CA
 LC STN Files: CA, CAPLUS, USPATFULL
 DT.CA Caplus document type: Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)

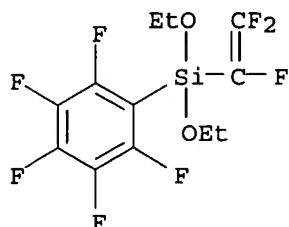


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 16 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 561069-06-5 REGISTRY
 CN Silane, diethoxy(pentafluorophenyl)(trifluoroethenyl)- (9CI) (CA INDEX NAME)
 FS 3D CONCORD
 MF C12 H10 F8 O2 Si
 SR CA

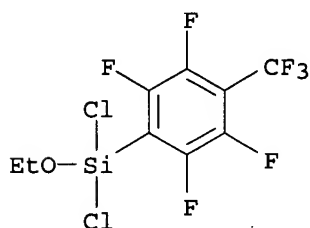
LC STN Files: CA, CAPLUS, USPATFULL
 DT.CA Caplus document type: Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 17 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 561069-05-4 REGISTRY
 CN Silane, dichloroethoxy[2,3,5,6-tetrafluoro-4-(trifluoromethyl)phenyl]-
 (9CI) (CA INDEX NAME)
 FS 3D CONCORD
 MF C9 H5 Cl2 F7 O Si
 SR CA
 LC STN Files: CA, CAPLUS, USPATFULL
 DT.CA Caplus document type: Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)

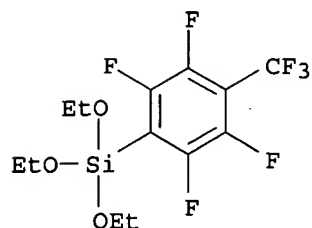


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4 REFERENCES IN FILE CA (1907 TO DATE)
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 18 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 561069-04-3 REGISTRY
 CN Silane, triethoxy[2,3,5,6-tetrafluoro-4-(trifluoromethyl)phenyl]- (9CI)
 (CA INDEX NAME)
 FS 3D CONCORD
 MF C13 H15 F7 O3 Si
 SR CA
 LC STN Files: CA, CAPLUS, USPATFULL
 DT.CA Caplus document type: Patent

RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 19 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
RN 220791-24-2 REGISTRY
CN Silane, trichloro(heptadecafluorooctyl)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Perfluorooctyltrichlorosilane
CN Trichloro(perfluorooctyl)silane
FS 3D CONCORD
MF C8 Cl3 F17 Si
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL
DT.CA Caplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: PRP (Properties); USES (Uses)

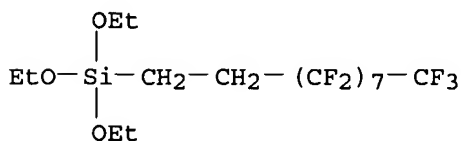
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PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

11 REFERENCES IN FILE CA (1907 TO DATE)
11 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 20 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
RN 101947-16-4 REGISTRY
CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 1-(Heptadecafluoro-1,1,2,2-tetrahydrodecyl)triethoxysilane
CN 1H,1H,2H,2H-Perfluorodecyltriethoxysilane
CN 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodecyltriethoxysilane
CN AY 43-158E
CN Heptadecafluoro-1,1,2,2-tetrahydrodecyltriethoxysilane
CN Perfluorooctyltriethoxysilane
CN SIH 5841.2
FS 3D CONCORD
MF C16 H19 F17 O3 Si
CI COM

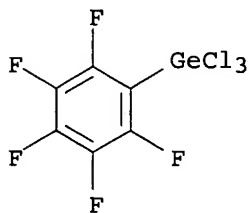
SR CA
 LC STN Files: CA, CAPLUS, CHEMCATS, CSChem, TOXCENTER, USPAT2, USPATFULL
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: PREP (Preparation); PRP (Properties); USES (Uses)
 RL.NP Roles from non-patents: PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

129 REFERENCES IN FILE CA (1907 TO DATE)
 6 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 129 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 21 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 69656-69-5 REGISTRY
 CN Germane, trichloro(pentafluorophenyl)- (9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Trichloro(pentafluorophenyl)germane
 MF C6 Cl3 F5 Ge
 LC STN Files: CA, CAPLUS, CASREACT, CHEMINFORMRX, USPATFULL
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7 REFERENCES IN FILE CA (1907 TO DATE)
 7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 22 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 51989-69-6 REGISTRY
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(9CI) (CA INDEX NAME)

OTHER NAMES:

CN Triethoxysilane acrylate

FS 3D CONCORD

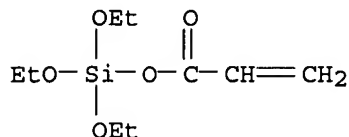
MF C9 H18 O5 Si

LC STN Files: CA, CAPLUS, USPATFULL

DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)

RLD.NP Roles for non-specific derivatives from non-patents: USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 23 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN

RN 25202-37-3 REGISTRY

CN Silane, ethenyldiethoxy(pentafluorophenyl)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Silane, diethoxy(pentafluorophenyl)vinyl- (8CI)

FS 3D CONCORD

MF C12 H13 F5 O2 Si

CI COM

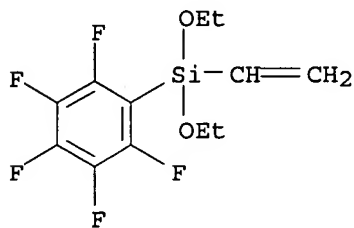
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(*File contains numerically searchable property data)

DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)

RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)



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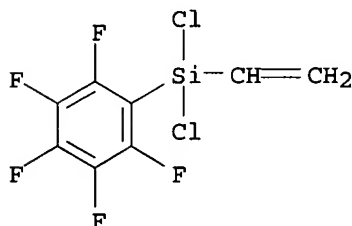
8 REFERENCES IN FILE CA (1907 TO DATE)

8 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 24 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN

RN 25202-33-9 REGISTRY

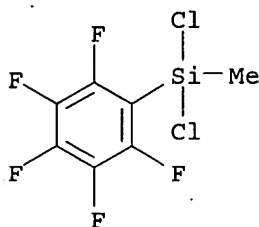
CN Silane, dichloroethenyl(pentafluorophenyl)- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Silane, dichloro(pentafluorophenyl)vinyl- (8CI)
 OTHER NAMES:
 CN (Pentafluorophenyl)vinylchlorosilane
 FS 3D CONCORD
 MF C8 H3 Cl2 F5 Si
 LC STN Files: BEILSTEIN*, CA, CAPLUS, USPATFULL
 (*File contains numerically searchable property data)
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)
 RL.NP Roles from non-patents: PREP (Preparation)



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5 REFERENCES IN FILE CA (1907 TO DATE)
 5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

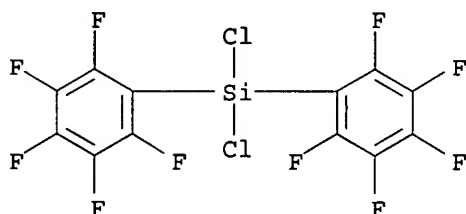
L3 ANSWER 25 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 21980-43-8 REGISTRY
 CN Silane, dichloromethyl(pentafluorophenyl)- (8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Dichloro(methyl)(pentafluorophenyl)silane
 CN Methylpentafluorophenyldichlorosilane
 FS 3D CONCORD
 MF C7 H3 Cl2 F5 Si
 LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, IFICDB, IFIPAT, IFIUDB,
 USPATFULL
 (*File contains numerically searchable property data)
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)
 RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

10 REFERENCES IN FILE CA (1907 TO DATE)
10 REFERENCES IN FILE CAPLUS (1907 TO DATE)

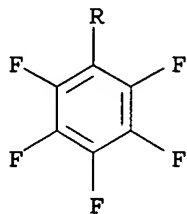
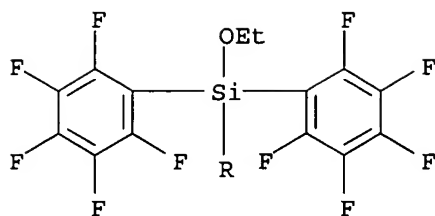
L3 ANSWER 26 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
RN 20160-45-6 REGISTRY
CN Silane, dichlorobis(pentafluorophenyl)- (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Dichlorobis(pentafluorophenyl)silane
FS 3D CONCORD
MF C12 Cl2 F10 Si
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, GMELIN*, USPATFULL
(*File contains numerically searchable property data)
DT.CA Caplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

9 REFERENCES IN FILE CA (1907 TO DATE)
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 27 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
RN 20160-43-4 REGISTRY
CN Silane, ethoxytris(pentafluorophenyl)- (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Tris(pentafluorophenyl)ethoxysilane
MF C20 H5 F15 O Si
LC STN Files: BEILSTEIN*, CA, CAPLUS, GMELIN*, USPATFULL
(*File contains numerically searchable property data)
DT.CA Caplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
RL.NP Roles from non-patents: PREP (Preparation)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5 REFERENCES IN FILE CA (1907 TO DATE)

5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 28 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN

RN 20160-39-8 REGISTRY

CN Silane, chlorotris(pentafluorophenyl)- (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Chlorotris(pentafluorophenyl)silane

CN Triperfluorophenylsilyl chloride

MF C18 Cl F15 Si

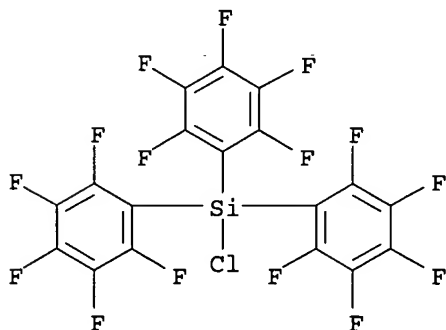
LC STN Files: BEILSTEIN*, CA, CAPLUS, GMELIN*, USPATFULL

(*File contains numerically searchable property data)

DT.CA Caplus document type: Journal; Patent

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USES (Uses)

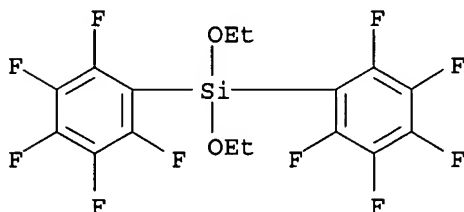
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(Reactant or reagent)



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13 REFERENCES IN FILE CA (1907 TO DATE)
14 REFERENCES IN FILE CAPLUS (1907 TO DATE)

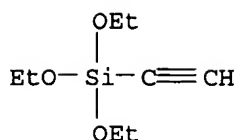
L3 ANSWER 29 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
RN 13888-69-2 REGISTRY
CN Silane, diethoxybis(pentafluorophenyl)- (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Bis(pentafluorophenyl)diethoxysilane
CN Diethoxybis(pentafluorophenyl)silane
FS 3D CONCORD
MF C16 H10 F10 O2 Si
CI COM
LC STN Files: BEILSTEIN*, CA, CAPLUS, GMELIN*, USPATFULL
(*File contains numerically searchable property data)
DT.CA Caplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
RL.NP Roles from non-patents: PREP (Preparation); PROC (Process); RACT
(Reactant or reagent)



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12 REFERENCES IN FILE CAPLUS (1907 TO DATE)

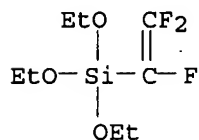
L3 ANSWER 30 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
RN 5700-28-7 REGISTRY
CN Silane, triethoxyethynyl- (7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Acetyleneorthosiliconic acid, triethyl ester
CN Triethoxy(ethynyl)silane
FS 3D CONCORD
MF C8 H16 O3 Si
CI COM
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT, CHEMLIST, GMELIN*,
USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA Caplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: USES (Uses)
RL.NP Roles from non-patents: PRP (Properties); RACT (Reactant or reagent);
NORL (No role in record)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

15 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 15 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

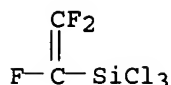
L3 ANSWER 31 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 2925-45-3 REGISTRY
 CN Silane, triethoxy(trifluoroethenyl)- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Silane, triethoxy(trifluorovinyl)- (7CI, 8CI)
 FS 3D CONCORD
 MF C8 H15 F3 O3 Si
 LC STN Files: CA, CAOLD, CAPLUS, GMELIN*, USPATFULL
 (*File contains numerically searchable property data)
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)
 RL.NP Roles from non-patents: NORL (No role in record)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6 REFERENCES IN FILE CA (1907 TO DATE)
 6 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 32 OF 32 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 359-51-3 REGISTRY
 CN Silane, trichloro(trifluoroethenyl)- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Silane, trichloro(trifluorovinyl)- (6CI, 7CI, 8CI)
 FS 3D CONCORD
 MF C2 Cl3 F3 Si
 CI COM
 LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, GMELIN*, USPATFULL
 (*File contains numerically searchable property data)
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses); NORL (No role in record)
 RL.NP Roles from non-patents: NORL (No role in record)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7 REFERENCES IN FILE CA (1907 TO DATE)
 7 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

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~~FILE WPIX~~ ENTERED AT 14:43:11 ON 12 JUL 2004
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FILE LAST UPDATED: 9 JUL 2004 <20040709/UP>
 MOST RECENT DERWENT UPDATE: 200443 <200443/DW>
 DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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 GUIDES, PLEASE VISIT:
<http://thomsonderwent.com/support/userguides/> <<<

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<http://www.thomsonscientific.com/litalert> <<<

>>> THE DISPLAY LAYOUT HAS BEEN CHANGED TO ACCOMMODATE THE
 NEW FORMAT GERMAN PATENT APPLICATION AND PUBLICATION
 NUMBERS. SEE ALSO:
<http://www.stn-international.de/archive/stnews/news0104.pdf> <<<

=> ~~*d*al*al*al*~~

L4 ANSWER 1 OF 1 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 2003-712419 [67] WPIX
 CR 2003-712420 [67]; 2003-712452 [67]; 2003-756565 [71]; 2004-009955 [01];
 2004-190139 [18]; 2004-236772 [22]
 DNN N2003-569956 DNC C2003-195794
 TI Hybrid organic-inorganic dielectric compound for integrated circuit
 applications, is of predefined formula.
 DC E11 L03 U11
 IN MAANINEN, A L T; MAANINEN, T J; PIETIKAINEN, J J; RANTALA, J T

PA (SILE-N) SILECS INC; (MAAN-I) MAANINEN A L T; (MAAN-I) MAANINEN T J;
 (PIET-I) PIETIKAINEN J J; (RANT-I) RANTALA J T
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 PI WO 2003057702 A2 20030717 (200367)* EN 110 C07F007-02
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 LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW
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 DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
 KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT
 RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA
 ZM ZW

~~US 2003162985~~ ~~A1 20030828 (200367)~~ C07F007-22 <--

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US 2003171607 A1 20030911 (200367) C07F007-04

US 2003176718 A1 20030918 (200368) C07F007-22

AU 2003201736 A1 20030724 (200421) C07F007-02

ADT WO 2003057702 A2 WO 2003-IB337 20030108; US 2003162985 A1 US 2002-41122
 20020108; US 2003166953 A1 US 2002-41302 20020108; US 2003166954 A1 US
 2002-41343 20020108; US 2003171607 A1 US 2002-41272 20020108; US
 2003176718 A1 US 2002-41121 20020108; AU 2003201736 A1 AU 2003-201736
 20030108

FDT AU 2003201736 A1 Based on WO 2003057702

PRAI US 2002-395418P 20020713; US 2002-41121 20020108;

US 2002-41122 20020108; US 2002-41272 20020108;

US 2002-41302 20020108; US 2002-41343 20020108;

US 2002-349955P 20020117

IC ICM C07F007-02; C07F007-04; C07F007-22

ICS C07F007-24

AB WO2003057702 A UPAB: 20040331

NOVELTY - The hybrid organic-inorganic dielectric compound is of preset formula.

DETAILED DESCRIPTION - The hybrid organic-inorganic dielectric compound is of formula, R1MR4R5R6.

R1 = partially or fully fluorinated aryl, alkyl, alkenyl, epoxy or alkynyl; and

R4-R6 = alkoxy, OR3 or halogen group X, except when each of R4-R6 is ethoxy, M is Si and R1 is perfluorinated phenyl or perfluorinated vinyl; R4 is ethoxy, R5 and R6 are chlorine, M is Si and R1 is perfluorinated phenyl; or when R4-R6 is chlorine, M is Si and R1 is perfluorinated phenyl, perfluorinated methyl or perfluorinated vinyl.

INDEPENDENT CLAIMS are also included for the following:

(1) method for making the compound R1MR4R5R6, which involves reacting the compound MOR3qX4-q with magnesium and compound R1X2 or with compound R1M1, to form R1MOR33. R1MOR33 is further reacted with a halogen or halogen compound, to form compound R1MR4R5R6; and

(2) method for using the compound which involves hydrolysing the compound in presence of H2O or D2O with a compound of formula R2MR4R5R6. A compound with -M-O-M-O-backbone with at least R1 and R2 groups bound together and having a molecular weight of 500-10000, is obtained.

M = element chosen from group 14;

OR3 = alkoxy group;

X = halogen;

q = 3 or 4;

X2 = Cl, Br or I;

R1 = alkyl, alkenyl, aryl or alkynyl;

q = 4;

M1 = element from group 1;

R4-R6 = halogen;

USE - For dielectric materials used in integrated circuit

applications.

ADVANTAGE - The compound has low dielectric constant, direct patternability, stability, ease of handling and deposition.

DESCRIPTION OF DRAWING(S) - The figure shows the cross-sectional process flow for patterning dielectric material film.

Dielectric material 31

Dwg.1/6

FS CPI EPI

FA AB; GI; DCN

MC CPI: E05-E; L04-C12E

EPI: U11-A08A

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